

***Eucalyptus semota* (Myrtaceae), a new species from the Ashburton District of Western Australia**

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Abstract

Macpherson, C.J. and Grayling, P.M. *Eucalyptus semota* (Myrtaceae), a new species from the Ashburton District of Western Australia. Nuytsia 10 (3): 437-441 (1996). A new species is described from a few populations near Marymia Hill, north-east of Meekatharra. It is related to *Eucalyptus blaxellii* L.A.S. Johnson & K.D. Hill, from which it differs mainly in habit, bark and juvenile leaf morphology.

Introduction

This paper contains the formal description of a new species of *Eucalyptus* (Myrtaceae) with a restricted occurrence near the south-western edge of the Little Sandy Desert in Western Australia. This species was discovered in 1991 and has subsequently been mentioned in two publications (Brooker & Hopper 1993, Brooker & Kleinig 1994).

In addition to the morphological description of the species, this paper refers to a chemo-taxonomic study (P. Grayling, unpublished), which demonstrates similarities between *E. semota* and *E. blaxellii* L.A.S. Johnson & K.D. Hill and differences between these species and the closely related *E. loxophleba* Benth. *sens. lat.*

Eucalyptus semota C.J. Macpherson & Grayling, sp. nov.

Eucalyptus sp. M of Brooker & Hopper (1993); *E.* sp. NN of Brooker & Kleinig (1994).

Typus: 4 km SW of Marymia Hill, Western Australia, 25°07'242"S, 119°44'233"E, altitude 630 m, 5 August 1992, C.J. Macpherson 1 (*holo*: PERTH 04170547; *iso*: CANB, K, NSW).

Eucalypto blaxellii L.A.S. Johnson & K.D. Hill *affinis* a qua statura superiore, cortice non-decorticanto et foliis juvenilibus majoribus differt.

A *mallee* or low branching *tree* to 10 m, more commonly 6-8 m. *Bark* pale grey, fibrous for 1-2 m, becoming loosely held and shed in ribbons, then smooth, dark to pale grey over pink to coppery

on upper trunks and branches. *Branchlets* red to orange; pith glandular. *Seedling stem* tuberculate, square in cross-section. *Cotyledons* bisected. *Juvenile leaves* petiolate, decussate, opposite for 4-5 pairs, broadly lanceolate, up to 13 x 3 cm, dull, green. *Adult leaves* petiolate, alternate, linear to narrowly lanceolate or falcate, 5-11 x 0.5-1.2 cm, concolorous, glossy, dark green, lateral veins regular, at 20-40° to the midrib, reticulation sparse, with numerous round to irregular island oil glands of varying sizes. *Inflorescences* axillary, unbranched, 7-13-flowered. *Peduncles* flattened, up to 7 mm long. *Buds* pedicellate, spherical, ovoid or obloid, 4-7 x 4-5 mm, operculum scar present. *Operculum* hemispherical, shorter than hypanthium, red when mature. *Flowers* white. *Stamens* inflexed, all fertile, relatively few. *Anthers* versatile, basifixed, cuboid. *Style* base sub-versatile, arising from a cavity in the ovary roof. *Fruit* pedicellate, obconical to cupular, 5 x 6 mm; rim thin; disc steeply descending; valves 3(4), enclosed. *Seed* dark brown, compressed-ovoid to cuboid, with shallow, distinct reticulum; hilum ventral. (Figure 1)

Selected specimens examined. WESTERN AUSTRALIA: 4.5 km SW of Marymia Hill, 7 July 1991, C.J. Macpherson 3 (PERTH); 6 km SW of Marymia Hill, 5 August 1992, C.J. Macpherson 4 (PERTH); 10.8 km SW of Marymia Hill, 5 August 1992, C.J. Macpherson 5 (PERTH), 4 km SW of Marymia Hill, 30 September 1994, C.J. Macpherson 2 (PERTH); 17.3 km E of Great Northern Highway on track to Ned's Creek, 7 August 1992, M.E. Lawrence 1808 (PERTH).

Distribution and habitat. Known from three disjunct populations within 15 km of Marymia Hill, and a fourth population approximately 71 km south-south-west of Marymia Hill, 17.3 km east of Great Northern Highway. All populations occur on pallid zone clay below lateritic mesa caps, with some continuation into drainage lines immediately below. *E. semota* forms a sparse to open overstorey in association with *Acacia aneura* and *A. pruinocarpa*, with various *Acacia*, *Eremophila* and chenopod species common in the sparse understorey. (Figure 2)

Flowering Period. September-October.

Conservation status. Geographically restricted. The total number of plants in the four known populations is estimated to be 2700. The species is not known within a conservation reserve. It is recommended that this species be listed as Priority 1 or 2, CALM Conservation Codes for Western Australian Flora.

Etymology. From the Latin, *semotus*, meaning remote, referring to the geographic isolation of known populations of this species from all other members of *Eucalyptus* series *Loxophlebae*.

Notes. The presence of two separately-shed opercula and bisected cotyledons place *E. semota* in the extracodical subgenus *Symphomyrtus*, section *Bisectaria* of Pryor and Johnson (1971). The presence of oil glands in the pith of branchlets, the relatively few stamens, which are completely inflexed in bud and which retain a distinct 'elbow' after anthesis, place this taxon in *Eucalyptus* series *Loxophlebae*. This small series consists of the widespread *E. loxophleba* and two other relatively rare taxa, *E. articulata* Brooker & Hopper and *E. blaxellii*. *E. loxophleba* comprises subsp. *loxophleba*, subsp. *lissophloia* L.A.S. Johnson & K.D. Hill, subsp. *supralaevis* L.A.S. Johnson & K.D. Hill and subsp. *gratae* Brooker. Although subsp. *gratae* was recently elevated to *E. gratae* (Brooker) L.A.S. Johnson & K.D. Hill, an extensive study (P. Grayling, unpublished) of series *Loxophlebae* based on morphology and leaf-oil analysis shows that species status for this taxon is not appropriate. Subspecies status is recommended in the present study.



Figure 1. *Eucalyptus semota* buds, fruit and adult leaves (scale 1 cm = 2.5 mm).

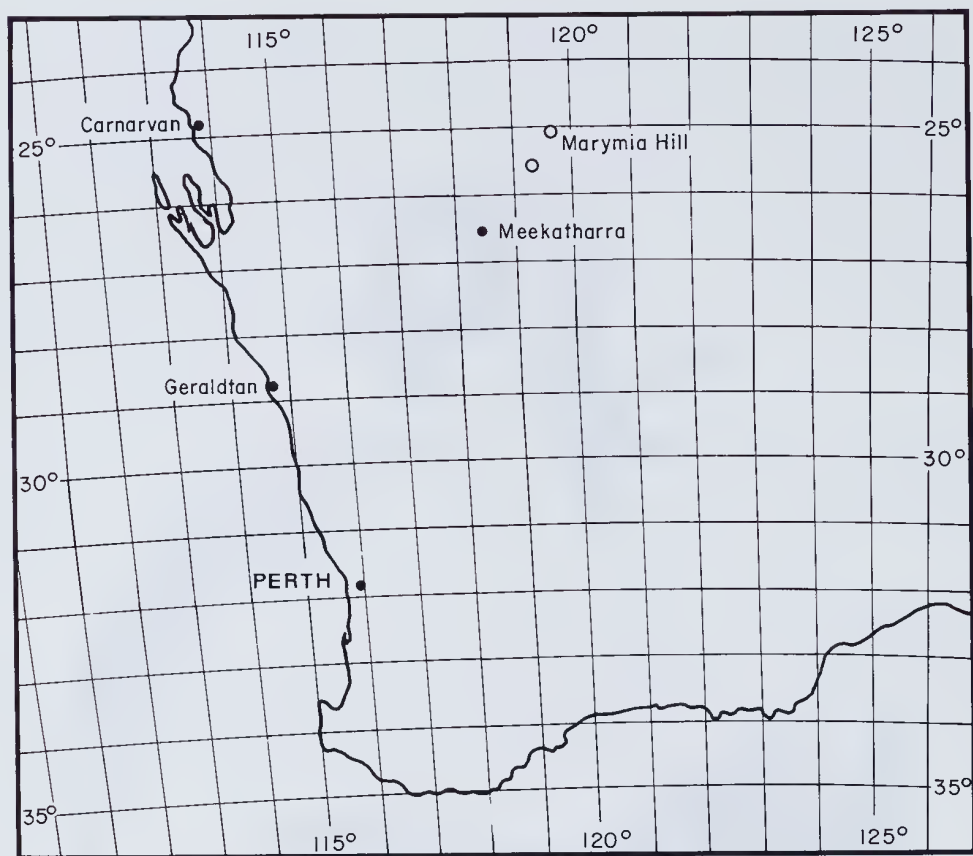


Figure 2. Distribution of *Eucalyptus semota*.

The seedling leaves of *E. semota* distinguish it from all other members of the series. *E. blaxellii* and *E. semota* both have broadly lanceolate seedling leaves, but those of *E. blaxellii* are considerably smaller, while those of *E. articulata* and *E. loxophleba* are ovate to orbicular. In other characters *E. semota* shows greatest overall resemblance to *E. blaxellii*, particularly in its bud and adult-leaf morphology, although it differs considerably in its bark and habit. The articulate style base is common to *E. articulata*, *E. blaxellii* and *E. semota* and is absent or less pronounced in *E. loxophleba*.

The ester 4-methyl-2-pentyl acetate (MPA) is a constituent of the essential oil in the leaves and inflorescences of members of *Eucalyptus* series *Loxophlebae* (Boland *et al.* 1991, Grayling & Knox 1991) and in three other relatively unrelated species in *E.* section *Bisectaria*, *E. micranthera* F. Muell., *E. stricklandii* Maiden and *E. effusa* Brooker. No other natural occurrences of the chemical have been reported. In *E. loxophleba*, while there is considerable tree to tree variation in the composition of essential oils in leaves and flower buds (P. Grayling, unpublished), MPA is usually one of the major constituents. It is present in the leaves of many interspecific hybrids involving *E. loxophleba*, and is therefore considered to be a useful taxonomic marker for that species. MPA has not been detected in the leaves of *E. semota*, *E. articulata* and *E. blaxellii*, though minute quantities have been found in the flower-buds. In this regard these three species differ markedly from *E. loxophleba* and interspecific hybrids of *E. loxophleba*.

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